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ABSTRACT

This unit of the Flexible Learning System (FLS) provides instruction for adults in helping children develop problem solving skills and attitudes, with particular emphasis on shifting the responsibility of solving classroom problems from teacher to children. Problems are treated as opportunities to learn in which individuals or groups want something changed, are personally affected, and are in a position to assume responsibility for solving the problems. Problems in the cognitive, social and personal domains are considered. Skills in problem identification and clarification, idea generation, implementation of solutions, and evaluation of results are explored. More than half of the book is devoted to teaching techniques for guiding children in problem solving activity. Techniques are grouped under "tuning in," "drawing out," guiding, and supporting the creation of possible solutions. Skills involve listening, paraphrasing, questioning, creating analogies and imagery, and connecting creations to reality. Thought problems, recognition of examples, recall of experiences, observations of children, classroom practice, and role play are embedded in 26 activities. Examples of classroom problems are interspersed among the activities. Related FLS units: "Helping Children Develop Healthy Self-Concepts"; "Understanding Children's Play Through Observation"; "Managing the Preschool Classroom"; "Communicating and Working with Parents." (Author/SB)

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problem solving with children

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THE FLEXIBLE LEARNING SYSTEM—COMPETENCY-BASED LEARNING UNITS FOR ADULTS IN EARLY CHILDHOOD EDUCATION

Problem Solving With Children

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and
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She holds a Master's degree from Fresno State University and is currently working on her doctorate at the University of California, Berkeley. Her primary concerns have been with human interaction skills group dynamics, group problem-solving and the development of Learning Centers with Responsively integrated curriculums.

She has developed a Learning Center Guide for Teachers, a Test of Six Problem-Solving Abilities, and has produced a 16 mm. teacher-training film: "Connections in Responsive Learning."

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OVERVIEW OF THE UNIT

A. Preface

B. Introduction and Purpose

A. Preface

When problem solving becomes a crucial part of a classroom environment children's thinking and reasoning powers increase as they become more independent in their own learning. A positive view of problem solving helps children develop healthy self concepts, cognitive skills and equitable interpersonal and social relationships.

Problems are defined as questions or situations that require answers, information or solutions, and are positively viewed as opportunities to learn. Problems are categorized as personal, social and/or cognitive.

A flexible series of stages in the problem solving process may become a tool for more productive, relevant learning. A teacher has the initial responsibility for problem solving in the classroom. Yet, it is important that the teacher not solve all the problems for all the children. As children are at different levels of awareness of their own problem solving processes, teachers need to observe, assess and decide when and how to offer appropriate guidance by:

- "Tuning in," listening to and respecting children's viewpoints; their thinking, feeling and acting.
- "Drawing out," paraphrasing and questioning in order to help children clarify their viewpoints.
- Guiding and supporting children's development of their own logic and creative ideas.

The focus here is on offering teachers an opportunity to develop skills in helping children assume more and more responsibility for their own problem solving, their own learning.

> I can give you nothing
> that has not already its
> being within yourself.
>
> I can throw open to you
> no picture-gallery but
> your own soul ... I help
> you to make your own world
> visible. That is all.
>
> H. Hesse.

Note to Reader:

The terms adult and teacher are used synonymously. All persons are referred to as he. No stereotyping is intended. The generic he has been used to enhance the flow of the narrative.

B. Introduction and Purpose

What are the implications
of problem solving?

When a child is encouraged to solve his own problems, what is he really being encouraged to do? To find answers? Solutions? Partially, but the answer or solution is really only a small part of problem solving. Far more important is the exercise of the intellectual processes involved. The child who is encouraged to solve his problems is being guided to explore, to think, to reason. The ability to reason is the prerogative of the human being; and the ability to reason effectively is a prerequisite of fruitful human life. There are very few aspects of daily living that are untouched by reason, by thought, and decision-making. It is a primary objective of education to help the child develop the ability to exercise these processes himself, in a functional and creative way.

Problem solving is a form of reasoning. It is logical and often imaginative thinking. It is invaluable to cognitive development, for in solving a problem almost all thought processes are engaged. One must explore, identify and utilize resources, question, and gather information. One must form ideas, opinions, create options and then analyze, decide among them, choose those that are the most useful, the most appropriate under the circumstances. At each stage it is a learning process; with each discovery there is increased understanding.

When a child begins to problem solve, he begins to gain new insight and information with each specific problem he encounters and attempts to solve. Perhaps more significantly, he begins to develop the ability to expand his repertoire of techniques with which to cope and learn from all different kinds of experiences. Through the exercise of thinking things through for himself, his mind becomes more open and receptive to the free-flow of thoughts, ideas and feelings; he integrates more fully and meaningfully. Creativity is stimulated, as is understanding, in both the cognitive and affective sense. It is more difficult to be inculcated with prejudice, intolerance, and fear when one can reason effectively and discover for oneself if there is actually any basis in a given situation for exhibiting these negative states of mind. The child must be urged to collect, sort and analyze information that he gets from many different sources and perspectives. Armed with this information, he must question himself and others constantly to check for consistency and sense. An open, logical, sensitive mind is essential to harmonious intercourse between an individual and his world.

Going through the process of problem solving also increases the child's awareness of himself as an individual. It helps him to get in touch with his ideas and feelings and helps to clarify what has meaning for him. The very fact that an adult trusts him to solve some of his own problems, and he has some success in doing so, fosters self-confidence. With self-confidence comes the ability to deal more effectively with all aspects of life. His relations with others are more empathetic and fruitful. He is developing the ability to take increasing amounts of responsibility for his own learning and behavior.

The solving of problems is a life-skill, by which many aspects of the cognitive and the affective worlds are integrated. It is the purpose of this unit to help teachers use this process as a tool. With it, they can help children become more attuned to themselves and their thought processes, stimulate them to think constructively and creatively, enrich and expand learning and understanding. There is no more useful skill that the adult can help the child to develop than his inherent ability to reason. In doing so, the adult will be guiding the child toward the ultimate goal of independence, self-guidance, and responsibility for his own thoughts and actions.

Speak to us of Children

And he said:

You may give them your love but
not your thoughts,
For they have their own thoughts.

You may house their bodies but
not their souls,
For their souls dwell in the house
of tomorrow, which you cannot
visit, not even in your dreams.

You may strive to be like them, but
seek not to make them like you.

-from THE PROPHET* by Kahlil Gibran

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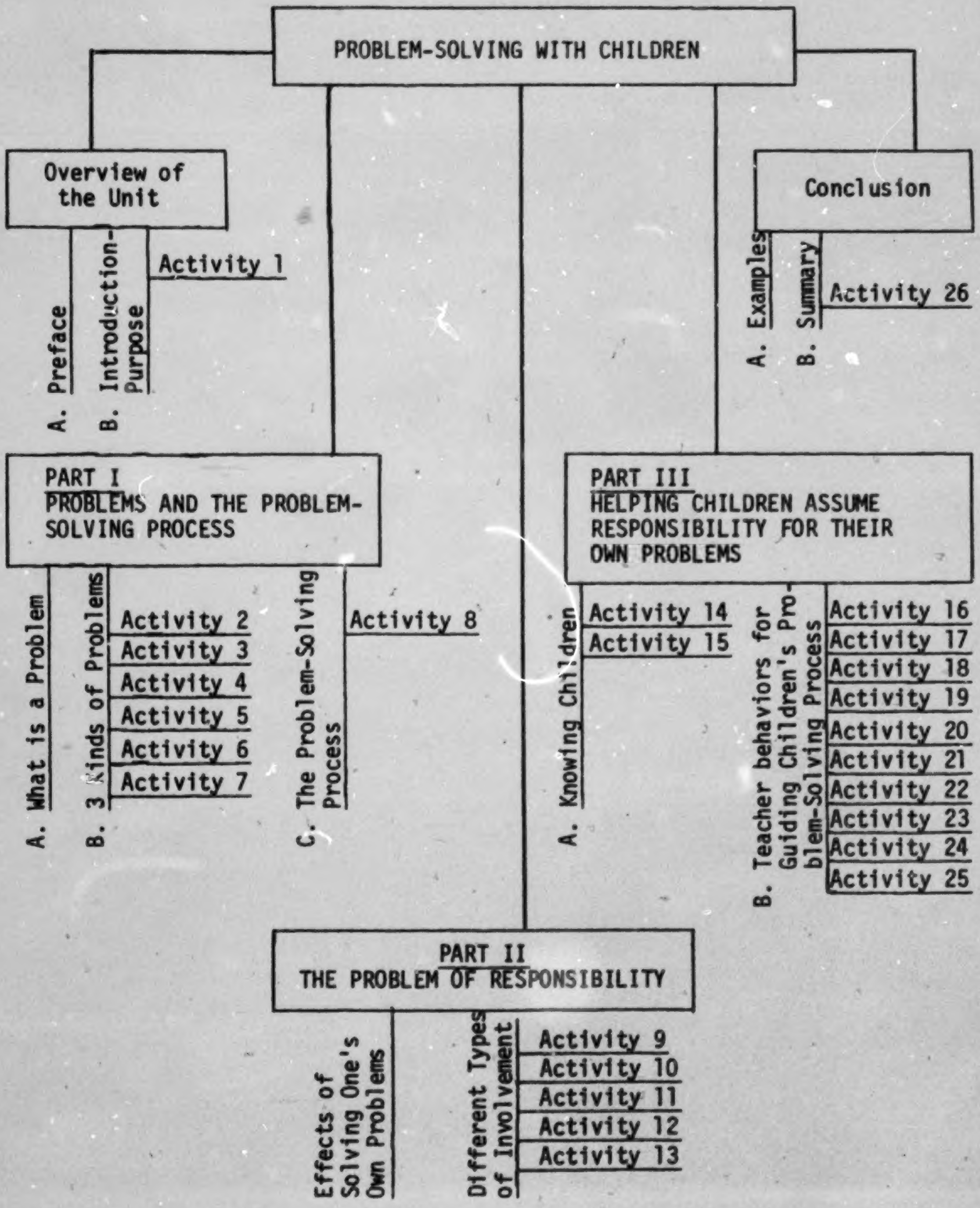
Map of Sequence and Concepts of this Unit



ACTIVITY 1: Clarifying the Purpose of this Learning Unit

Ponder what you have just read. Familiarize yourself with the "Map" of this unit, the Table of Contents, and the overview of each part. Think about the purpose of this unit, and what you will learn. As you clarify your thoughts you are identifying your expectations for your experience with this material.

This unit is about . . .

I expect to learn . . .

I

PROBLEMS AND THE PROBLEM SOLVING PROCESS

A. What is a Problem?

B. Three Kinds of Problems

C. The Problem Solving Process

Overview of PART I

In this section you will record cognitive, social or personal problems that you have identified. You will begin a list of problems you wish to work on as you progress through this material.

You will analyze a problem you have already sucessfully solved in order to identify why it was a problem and the stages you went through in order to solve it. You will be given the opportunity to apply these stages of the problem solving process to a problem you want/need to solve now.

A. What is a Problem

A problem is an opportunity to learn.

A problem is a question or situation that requires additional information or a solution. The information might be gathered through research, discussion and/or thought. The solution could involve clear-cut answers, clarification, change, or compromise. All problems can be viewed as challenges or opportunities to learn, and as such lose some of their negative connotations. It is the purpose of this unit to acquaint teachers with the unique potential of problem solving as a learning experience, and to help them utilize some of the many problems that arise each day in the classroom in a constructive way.

B. Three Kinds of Problems

Cognitive
Social
Personal

There are basically three kinds of problems that occur in the classroom situation - cognitive, personal and social. Many problems actually fall into more than one category. It is useful to begin to identify certain kinds of problems and think about who they affect and how to go about solving them.

1. Cognitive: Cognitive problems are all those having to do with the school curriculum per se. This includes problems that the teacher may pose for instructional purposes, from the traditional arithmetic problem by which the abstract is transformed into the more concrete, to a proposition such as, *"If it were the year 1786 what would your life be like?"* Also included are specific problems that a child may have in dealing with the curriculum, *Freddie does not understand the difference between warm-blooded and cold-blooded animals*, and specific problems that the teacher may have in presenting the curriculum, *"How can I teach multiplication without having children memorize the tables?"* Then there are all the questions that children ask and should be encouraged to ask themselves and others in the quest for information and understanding, *What is electricity? Why is the moon sometimes orange? Why do some animals become extinct? What makes a good baseball player? Why is your skin brown?*

Why is it important for a child to begin to solve his own cognitive problems? License to explore and question expands learning by stimulating interest. The more a child wants to know, the more he learns, the more encouragement he gets to ask questions and seek answers, the greater the energy he puts into the search. The harder the search, the more he is exposed to, and the more he finds that interests him. Functional learning takes place only when there is real interest and involvement, when what the child is learning has relevance for him. Enabling the child to go through the process of solving his own problems helps him to get in touch with what has meaning for him, and in doing so, he begins to construct his own learning. Helping the child to develop his ability to think for himself, to reason, analyze and understand more fully, ensures his ability to integrate and to apply constructively, the skills and information he learns.

ACTIVITY 2: Cognitive Problems

Ask yourself if you've identified any cognitive problems in your classroom. Use this space to record them.

2. Personal: Personal problems are those that are related to an individual and affect his conduct, character, and motivations. They are often situations which the teacher or child bring with them from home to the classroom. *The teacher is preoccupied with the sick child she left at home. Terry had a bad dream the night before and comes to school tired and uneasy. Henry forgot his lunch and is crying.* Sometimes problems are psychological and manifest themselves in additional problematic symptoms. *Cindy stutters. Mary is painfully shy and cannot be approached.*

It is important to a child's mental health that he be helped to solve as many of his personal problems as possible. Not only is the process itself often cathartic, but it also helps the child to become more aware of who he is as an individual, what his motivations and feelings are. The child's self-confidence increases as he begins to take the steps to solve more and more of his own problems.

ACTIVITY 3: A Personal Problem

Record any personal problem that you have identified (either your own or someone elses).

3. Social: Social problems involve interpersonal behavior and encompass a wide range of situations. These are the many problems which arise in the course of interaction among members of the class. Children often have problems with sharing, *Victor hides the gyroscope so that he can play with it whenever he wants to.* There are personality conflicts, *Ed, who is boisterous and agressive constantly teases the more introspective Louis.* There are situations in which a group of children band against a single child, *The children playing kick ball will not let Bill play because he always kicks the ball over the fence.* There is sometimes intolerance of children who are different from the majority or who are new to the group.

There are social problems which extend beyond the boundaries of the classroom, into the school as a whole, or into the community. Many of these have more universal implications and involve issues that concern society as a whole. *A group of children want the school playground to stay open after school hours. Some children are concerned that the driver of their school bus has a habit of running through stop signs. The class decides that something should be done to clean up the litter on the beach. The class would like to do something to cheer up the children in the local hospital.*

Helping children to identify and solve the problems that arise among themselves fosters greater sensitivity to and understanding of others. At the same time that children are learning to think for themselves they must learn to respect and appreciate the rights and individuality of other children and adults. A dynamic society in the classroom as in the world is based upon the interaction of independence and reciprocity. One aspect of reciprocity is social consciousness. It is never too early to begin stimulating this awareness of and concern for others. The child who begins to share, compromise and find ways to help other people is developing a fruitful way of interacting in society.

ACTIVITY 4: A Social Problem

What social problem have you identified? Record it here.

ACTIVITY 5: Your List of Problems-to-be-Solved

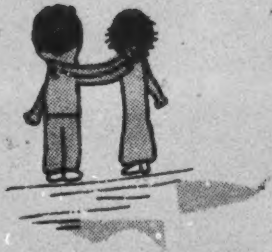
Keep a running list of problems you now have for which you wish to find solutions.

Mark with a "S" those problems which involve people--social/ interactional.

Mark with a "C" those problems which are cognitive and curricular in nature--those that involve materials/experiences.

Mark with a "P" those problems which are personal--A child's or your own.

Then look at your list. Do you have more social or cognitive or personal problems? If you are working in a group, compare your answers to this questions with others in the group. Add to this list as you move through this unit. Your problems will be the ones that we will suggest you work on as you progress through this unit.



ACTIVITY 6: A Problem You Have Solved

Think of a problem you have solved; one that you're pleased with; one that you found a solution for which changed the situation so that your question or need was met; the outcome was successful. Write your responses to the following questions.

1. State your problem:

   Why was it a problem for you?:

2. What was your solution to your problem?:

   What processes (stages) did you go through to solve it?:

ACTIVITY 7: Another Look at the Problem You Have Solved

① Review your responses to questions in Activity 6.

② Read one teacher's responses to those same questions.

Analysis

Problem: *How can I motivate Johnny? He seems so bored and won't complete any reading, writing or even any math assignments.*

Why was it a problem for you?: *I wanted to "turn him on" to his own learning. His boredom bothered me. I was disappointed when he seemed so disinterested. He's in my classroom, and I feel responsible for his learning. I want him to become really involved, and to enjoy learning.*

- There was something the teacher wanted to change.
- The teacher was personally affected.
- The teacher could take some responsibility for changing the situation

What was your solution to your problem?: *I observed him closely, overheard him talking with his friends, and finally found something he was interested in--motorcycles. I brought in some motorcycle books and asked him if he had any motorcycle magazines. He was excited and brought piles of them to school. We used these for his reading, writing and math assignments.*

What processes (stages) did you go through to solve it?:

I identified the problem myself. (The principal didn't tell me I'd have to or I wouldn't get paid this month.) Then I decided I wanted to do something about it. I had the freedom to think it through and could take the responsibility for trying some things without real fear that I might endanger Johnny or my job. My goal was to find something that interested him...something really relevant. I had some of my own ideas, talked with others and found some magazines that had some good ideas. I found out that other teachers had used motorcycles (their speeds, height and length of jumps, etc.) for math, reading and spelling. I could make the decision of when to try which ideas. I observed and evaluated to see if my ideas had helped to change the learning environment for Johnny.

Analysis

- Problem identification
- Problem clarification
- Creation of ideas
- Implementation of ideas
- Evaluation of outcomes

③ Now look at your responses to the question: Why was it a problem for you? Compare your responses with the example. Do your responses deal with basically the same issues listed in the Analysis column?

- There was something you wanted to change?
- Were you personally affected?
- Could you take some responsibility for changing the situation?

If this was really a problem for you and you solved it so that the situation was better for you, then you probably touched on the above three issues in some way. If there was not something you wanted to change, or you were not personally affected, or you couldn't take any responsibility in the situation, you probably did not have a problem.

Interestingly enough when these issues are turned into questions they are often helpful in further clarifying a problem situation. E.g:

- What is it I want to change?
- How am I affected?
- What responsibility can I take for changing the situation?

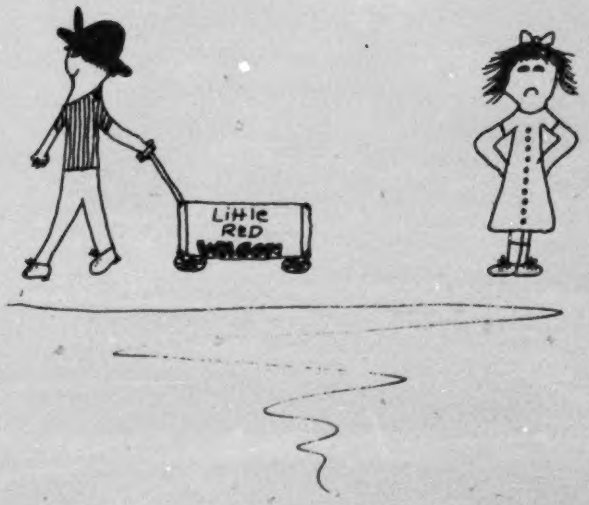
Try to keep these three issues in mind when you approach any problem. By asking yourself these kinds of questions you can become more clear about your problem, and often save yourself from taking on more problems than you really need to.

④ Now look at your responses to the question: What processes (stages) did you go through to solve it? Again compare your responses with the example. Do your responses deal with basically these stages?

- Problem identification
- Problem clarification
- Creation of ideas
- Implementation of ideas
- Evaluation of outcomes

You probably went through most of these processes intuitively. We have learned, however, that when we become more consciously aware of these steps, we are likely to make more progress in helping children and ourselves learn some fairly flexible problem solving processes. These steps can become "handles," tools, to use for solving many kinds of problems.

We do not always follow all of these steps, nor in this precise order. However, becoming aware of them may give some clarity to the problem solving process. It might be interesting to consciously try going through these steps as you attempt to find a solution to a problem that is bothering you at this moment.



C. The Problem Solving Process

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identification
clarification
creation of ideas
implementation
evaluation

There are certain problems that circumstances solve, but most problems require that someone actually seek a solution. Often there is more than one solution to a particular problem. In order for someone to take responsibility for solving a problem, he must have a personal interest in it and want or need to do something about it. He must also be aware of both the problem and the need for a solution. Very often one person will be able to perceive a problem that another person has, but of which that person is unaware. In the case of the teacher and child, it is important for the teacher to try to help the child become aware of those problems from which he may learn.

Once someone decides to actually solve a problem it is helpful to go through some general stages to find a solution. The stages are not necessarily sequential, nor must every step be taken with each problem. Much depends on the nature of the problem itself, and on the emotional, intellectual, and cultural make-up of the person doing the solving. Once again, the general stages of problem solving are:

Identification
Clarification
Creation of Ideas
Implementation of Ideas
Examination of Results

1. Problem Identification: A person identifies a problem when he says that he wants/needs to change a situation or find out more about it, is affected and is willing to assume some responsibility for taking some steps toward solving it. *I need to find a way to involve the children in cleaning up the room. I want to help the children learn to play soccer without fighting. I need to find more planning time.*

2. Problem Clarification: This stage involves analyzing why it's a problem; what you have already tried or thought about; and your goals for changing the situation, for finding some answers. *Given a teacher's problem of not liking a messy room at the end of the day, the teacher's goal is to get the room cleaned up so he doesn't have to do it all himself. This teacher recalls that he has already talked to the class as a whole about his displeasure with a messy room at 3 p.m. each day. Two children had volunteered to be "mess monitors" each afternoon and had been neglecting the responsibility. The teacher felt a need for a new approach, new ideas and better plans for solving his problem. This teacher has observed that it's primarily the science and art areas that are messiest each day; that Sam, Ray and Henry have been leaving papers, bug collecting boxes, and mounting boards in disarry. He's also observed that when children use chalk and charcoal for their large collage project they have been creating havoc in the art area. A further defined goal became to get these two centers cleaned up without teacher help or nagging.*

3. Creation of Ideas: It is often necessary to gather ideas from as many sources as possible or for a small group to build an idea together. Individual and group creativity in coming up with new ideas needs to be encouraged and supported. There are many times, especially at first, when

children or adults who aren't used to having their ideas valued, may be hesitant to volunteer them. Often people do not even realize that they have good ideas... After some experience with generating ideas, people can become more trusting of the environment and more willing/able to generate creative ideas. As new ideas are developed it is also important to anticipate the outcomes of their implementation.

To continue with the messy classroom example, the teacher's idea is to talk to the children who have been using the science and art centers the most, and to do this while they are working in the center tomorrow; to ask for their ideas and build on them until one idea emerges that seems good enough to the children *and* *the teacher.*

4. Implementation: This stage involves deciding on and developing a plan that is based on the best idea which has been generated; and to use whatever resources necessary to carry out the plan.

The teacher talks to the two groups of children the next day. He explains the problem to them. He draws out their perspective. "I'm thinking you have some ideas to solve the problem." The group then decides on who is to implement the best cleaning idea for each group. They share their plans with the class so that all know the plans for cleaning the two centers.

5. Evaluation: This stage involves comparing the results of carrying out the plan with the goals that were identified. Does the solution satisfy the goals? If not, why? Retrace the problem solving stages. Often, if the solution is not satisfactory, another question or problem has surfaced - or there is another piece of the original problem to solve.

Each day the teacher checks the centers - has the plan worked? If so, he will tell the children and give them credit. If not, he will meet with them again to negotiate a new plan. The results will be shared with entire class.

It is important to remember that going through the steps necessary to solve a problem stimulates:

thinking
reasoning
decision-making
exploration
understanding
receptivity
creativity.

Of all the skills we teach, problem solving is the one thing that we can be sure the learner will need as he becomes an adult.

ACTIVITY 8: Integrating PART I

How often have you said, "The Problem is __________" and then proceeded to get immersed in complaints and griping without disciplining yourself to go thru some specific stages of problem solving? How more efficient, creative and productive we might become if we became aware of some basic problem solving tools?

Take one of the problems on your "Problems-to-be-solved" list. Try using this form for your own "paper and pencil problem solving."

1. Problem Identification:

I want or need to find out how to . . .

2. Problem Clarification:

It is a problem for me because . . .

I have already thought about or tried . . .

My goals for changing the situation are . . .

3. **Creation of Ideas:**

My new ideas are . . .

Ideas from others are . . .

The best idea is . . .

4. **Implementation:**

Based on the best idea, my plan is to . . .

5. **Evaluation:**

My plan worked because . . .

My plan didn't work because . . .

II

THE PROBLEM OF RESPONSIBILITY

A. Effects of Solving One's Own Problems

B. Different Types of Involvement

Overview of PART II

The teacher has the initial responsibility for problems in a classroom, yet it is important that he share as much of this responsibility with the children as is appropriate.

Children grow cognitively, in their positive concept of themselves and in their relationships with others as they become more and more independent.

There are times when the teacher needs to take complete responsibility for solving a problem, other times when he needs to share the responsibility or allow children to work through their problems without adult interference.

There is individual problem solving, teacher-child, child-child, small and large group involvement. In each situation the teacher's job is to decide on how much and what kind of responsibility he needs to take in order to assure an optimum problem solving experience for the children.

You will be asked to recall and examine instances when you needed to solve a problem for a child; when you shared the responsibility with a child or a group; when you allowed a child or children to problem solve independently.

The Responsibility Issue

The first step in finding a solution to any problem is for someone to take responsibility for doing so. Obviously, solutions will not be found if no one seeks them, but sometimes it is difficult to determine just who should do the seeking. In a situation involving an adult and a child, the adult too often makes the mistake of taking on a problem that the child could be helped to solve for himself. The reasons for this are many. It is easy to unconsciously confuse the feeling of general responsibility for the child with the need to impose the adult's own solutions and perceptions. The adult may be misguided in thinking that he is actually helping the child. He may feel that the child is not "ready" to solve a particular problem for himself. The adult may become impatient because the child is taking too long to arrive at a solution; it is often easier to just hand over an answer. The teacher may have an especially difficult task in trying to determine when to assume responsibility for solving a particular problem, and when to help a child to find his own solution. In the classroom, the teacher essentially has full authority and responsibility -- he is responsible for the welfare of his students, for their cognitive development, for their social interaction. When and how can he begin to share some of this responsibility? Technically, all problems that arise in the course of the school day fall into his domain and can be perceived, from one angle, as his to solve. But can the teacher, should the teacher try to solve all problems? It is his further responsibility to decide when a child should be encouraged and helped to solve his own problem.

A. Effects of Solving One's Own Problems

Solving one's own problems
increases cognitive growth,
self-concept and pluralism
in the classroom

If the solving of problems is regarded as an opportunity for intellectual and emotional growth, then it becomes very important that one attempt to find effective solutions to one's own problems, and at the same time allow, even respect the right of others to benefit from the same processes. One of the most important goals of education is not to present the child with all the answers, but rather, to stimulate him to think for himself, to guide the child, by stages, into taking increasing amounts of responsibility for his own learning and behavior. Gaining the ability to solve problems develops certain skills, concepts, and behaviors that are necessary to fulfilling this goal.

Development of the crucial powers of reasoning is, perhaps, the most obvious contribution that problem solving makes. More subtle, but equally important to the objective, is the way in which the ability to take responsibility for one's own problems and successfully find solutions strengthens the child's concept of himself. Without self-confidence, the child would never have the courage to actually think and act for himself. The feeling of accomplishment that one gets when one has effectively thought a problem through to solution is enhanced in the child by the awareness that an adult respects him as an individual actually capable of taking responsibility for his thoughts and actions. This knowledge is a powerful tool for the child to work with in developing an understanding of himself as an individual and of his own potential. Conversely, there is the implication if answers are too readily handed to the child that he is unable to think for himself. This creates a dependency of the child on adult perceptions and solutions and is actually detrimental to the whole learning process, and to the healthy psychological growth of the individual as well.

The classroom can be viewed as a microcosm of the world that the child will not only be affected by, but will himself affect. It is therefore extremely important for him to begin to develop a social consciousness, an awareness of himself as one individual among many, to learn to interact constructively with others, to learn to share responsibility, ideas, goals. Encouraging children to discuss differences with each other and to take responsibility for working out solutions to mutual problems should help to promote understanding and cooperation among many and different people. Denying children the opportunity to problem solve among themselves interferes with constructive social process.

B. Different Types of Involvement

Assuming Responsibility
- Teacher
- Child
- Two or more Individuals

Now that the need is understood, for the teacher to transform the responsibility of thinking for thirty into the far greater responsibility of guiding the thirty to start thinking for themselves, how does one begin? There are essentially three ways in which responsibility can be taken in the classroom:

1. By the teacher 2. By the child 3. By two or more individuals

There is certainly no instant formula for assuming or delegating responsibility for solving a particular problem. The teacher should try to limit as much as possible, the outright volunteering of solutions. This should be done, ideally, only when the personal safety of a child or children is involved, and the solution may well take the form of a command --*"Stop throwing rocks at the younger children!" "Alright, everyone stand up and quietly leave the room; there may be a fire."*

If a child or a group of children is in the process of solving a problem they should be left alone to do so until they, themselves, indicate the need for aid. Often a child will be able to work out certain stages of the process but will need help with others. This will, of course, vary with each problem, and different children will indicate impasse in different ways. When a child has a problem, however, and does not realize it, does not want to deal with it or does not know how to begin, the teacher must decide if and how to help the child assume responsibility for the solving.

Will the child learn?

There is a crucial guideline for deciding whether or not a child should be encouraged to take on the responsibility of solving his own problem: *Will the child learn through attempting to solve a problem or will he become more confused or frustrated by being expected to take full responsibility for a particular situation?* It is difficult, but essential for the teacher to develop his own perceptions and sensitivity to the point where he can judge how much potential a particular problem has for a particular child as a learning experience.

Will the child develop intellectually?

Will he be able to gain some insight into himself?

Will he increase his understanding of others; develop social awareness? If the teacher feels that the child will grow in any way by attempting to solve a particular problem, he should encourage the child, help the child to utilize the potential of the situation. Even if the child ends up having done very little of the actual solving, he will have been acquainted with the process, and will be able to build on the experience and others like it.

When to help

The teacher must begin by recognizing symptoms that indicate that a problem exists for a child. Among these signs may be frustration, boredom, anger, restlessness, complaints about a certain task, puzzlement, lack of confidence. Having identified one or more symptoms, the teacher must interpret them. In order to do this, he must understand the individual child, be attuned to his weaknesses, strengths, thoughts and feelings. He must also try to gain an understanding of the particular problem in context, perhaps from several different perspectives. Only then can he really decide how much help, if any, to give the child in solving the problem, and what form that help should take. He can also determine how much encouragement to give the child to take responsibility for solving it himself. If the teacher decides that he must assume some responsibility for solving part or all of the problem, he should keep checking with the child to see at what point the child can begin to take over, and what thoughts and ideas of the child's have been stimulated.

Teacher responsibility

The teacher might realize that a particular problem is beyond the scope and ability of a particular child to solve at any level. The reason for this is often that the child is too emotionally involved in the situation to be able to achieve any sort of perspective at all. It is important for the teacher to understand the affective behaviors of the child. He must know when to accept a child's dependency; when it might upset the child's emotional balance to expect him to solve a problem for himself. *The child who stutters is being mercilessly teased by some other children.* There is absolutely no point at which she can begin to deal with the situation - she is crushed. There is a need for an immediate solution. It is necessary for the teacher to intervene and it is his responsibility to do so. It is appropriate under the circumstances. *A task is too difficult for a child. Instead of looking around for help, he throws a tantrum.* He obviously cannot cope with the problem and passes the responsibility for dealing with it to the teacher. In this case, the teacher after determining what is wrong, might be able to guide him into developing some ideas for modifying the task. The teacher might decide that the child is too upset at the moment to think rationally and, instead, offer a solution or choice of solutions. By being offered a choice of more than one solution, the child is being involved, at least somewhat, in the decision-making process. It might even be necessary to deal with the immediate behavioral manifestation of a problem situation - calm the child having the tantrum, and postpone offering or helping the child to find solutions to another problem at another time. The teacher must make the decision, and if it is appropriate and necessary he must take control, accept responsibility for solving a particular problem.

ACTIVITY 9: The Teacher Takes Complete Responsibility

Recall a time when it seemed appropriate for you to solve a problem for a child or group of children - (a situation in which you gave the child a solution).

The situation:

What you did:

How did the child/children respond?

If you could re-create the situation, would you act in the same way? Differently? Why?

Joint responsibility

It is often the case that the responsibility for solving a certain problem lies with more than one person. There are teacher-child, child-child, and group problems. If a child is bored or frustrated, it may be because the work that the teacher has given him to do is not sufficiently stimulating or relevant -- the problem is both the child's and the teacher's and they must work together to find solutions

scene: *Tom is frustrated and upset over math assignment, asks for teacher help.*

T: By looking at your last few papers, Tom, I can see that you really need to learn to add 2 columns of numbers more accurately. Can we find a way together for you to practice adding and carrying? (Clear problem statement)

Tom: I hate math

T: You don't like math when it's just adding numbers on a drill sheet of paper, right? (clarification)

Tom: Yeah

T: Is there a time when you used numbers that was really fun or interesting for you? (clarification)

Tom: Sure, I added all those prices on our grocery list...That was when we were doing a lot of cooking. Those were long lists, and I added them right...Susan even said they were right.

v.s.

Tom: "I can't do this math. I hate math.

T: "Why don't you settle down and try." (advice)

Tom: "I don't like to do math."

T: "It's really not so hard. Here's how you do this one." (demeaning, giving solution)

Tom: "I can't do it."

T: "You're just tired and upset." (evaluating child's feelings)

Tom: "I'm not tired. I want to go to recess."

T: "Just settle down and do it or you won't be able to go out!" (ordering, threatening)

T: I've got an idea...Let me check it out with you. What if we made a grocery store in our room. You could become the grocer and keep records of our inventory? (idea creation)

Tom: Yeah. Could I do my math that way?

T: Sure and I'll show you how to set up inventory sheets and I'll expect them to be turned in with your work folder each week. O.K? (planning for implementation)

Tom: Sure, when can I start?

ACTIVITY 10: The Teacher Shares Responsibility

Recall a situation in which you shared the solving of a problem with a child or small group.

The situation:

What you did:

Effect on the child or children:

Child responsibility

When an argument takes place between two children, they should be given the opportunity if possible, to work it out together and to learn from the process. Have you ever witnessed two children using a strategy of heated verbal confrontation for solving their problem? If they weren't hurting each other, or particularly bothering anyone else, have you tried just observing from a distance to see whether or not they solve their problem by themselves? Often children are able to solve their own problems without adult guidance. Just as often the children may profit (afterwards) from the teacher's providing an opportunity for them to examine their own process. Perhaps they may discover a more beneficial strategy than argument. At other times children do magnificently in making their own decisions in learning situations. *Darren goes to the library to find a copy of the Morse Code he needs for his telegraph system; Susan figures out a logical way to store the math manipulatives; Jim and Gary call a class meeting and ask the teacher to be their resource in planning their Art Fair.*

ACTIVITY 11: Children Solving Their Own Problems

Can you recall or observe for an example in your classroom of children solving their own problems without any guidance from you?

Scene:

What did the child/children do?

How successful was their problem solving for them?

How could these children learn from a post-problem solving session with you where they were helped to find alternative ideas and/or to recall the processes they went through?

Group Problem Solving

There are times when it is appropriate for the teacher to guide a group of children through the stages of problem solving.

---

scene: *Teacher and group of 7 children sitting in a circle...They have a large sheet of butcher paper taped to the chalk board so that they can record ideas. The teacher has shared a problem and has asked these children to help her solve it.*

Teacher: My problem is: How to fix a quiet reading space. How could we fix a space in our room that would be quiet, and yet we could still see into and out of it? (Identification)

Let me tell you a little more about the problem. I feel that we have a lot of good places to learn here -- and open shelves so we can see, and lots of materials and games. One thing I think we've missed is a place to really get away and be quiet, really quiet. And I'd like your ideas. (Clarification)

John: We could make a wall with a round hole we could peek through and crawl through... in the corner of the room. (Creation of ideas)

Mike: A little circle door...

Mark: A round door and a circle peeking hole. The door could have a lock on it -- for if you wanted to be really alone!

Melissa: We could make a cocoon...A little tunnel in the corner.

Craig: And it could have a spot light in it, and you could crawl in it with a book.

Teacher: I really like all your ideas. Let me check what I'm hearing... A round, tunnel, cocoon-like thing in a corner of the room with a spotlight in it for reading. Did I hear your ideas right?

Children: Yeah...

Craig: We could have lots of tunnels... with round doors.

John: We could dig tunnels under the school!

Melissa: That would really be fun... going down there.

Greg: Let's have no lights... to make it very, very spooky!

Scott: Yeah, and we could play ghosts too.

Greg: One light for readers.

Teacher: Could we build a tunnel-like space above the ground... in our classroom... like an underground above the ground?

Mark: We could have an elevator!

Scott: Oh, neat.

Greg: Great.

Teacher: How can we use your beautiful ideas to come up with one thing that we really can do?

Melissa: We could get some spare rug stuff that's left over from the new building...

Greg: And cover some old crates and put them in the corner of the room.

Scott: Melissa made me think... There's that see-through plastic stuff they're using in the new building too... We could make a wall out of that... Don't know if they'd give us some of not.

John: And cut a round crawl-through place.

Teacher: Wow! What great ideas you have. I'm hearing a multi-leveled small cocoon-like space, carpeted in the corner of the room, and separated from the room by a plexi-glass wall that you can see through but not hear through -- with a round hole to climb in and out... Right? O.K. Do we all agree that this would be an idea we could try?

Children: Wow! Neat!

Teacher: What shall we do first?

Planning for Implementation proceeds with different committees [illegible] children taking charge of finding boxes, checking carpet scraps, measuring for plexiglass, checking prices, etc

Evaluation: would come after project is complete... How the children and teacher felt about it. Was the problem of needing a quiet reading space solved?

ACTIVITY 12: Group Problem Solving

Think of a problem that could be solved by your class as a whole or by a group of children. Plan how you would handle the problem solving process with this group of children.

Scene:

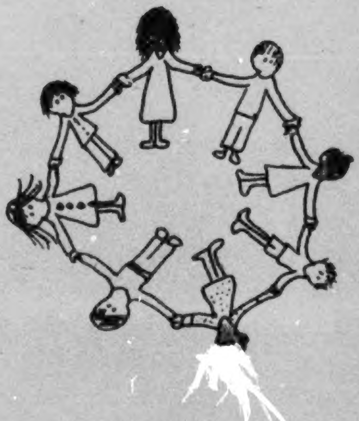
Identifying the problem:

Clarifying the problem:

Creating ideas:

Planning for Implementation:

Evaluating the outcomes:



ACTIVITY 13: Integrating PART II

Observe a child you work with or see often. Can you find a situation when he has a problem? Document what you see.

What are the indications that s/he has a problem?

What is the problem?

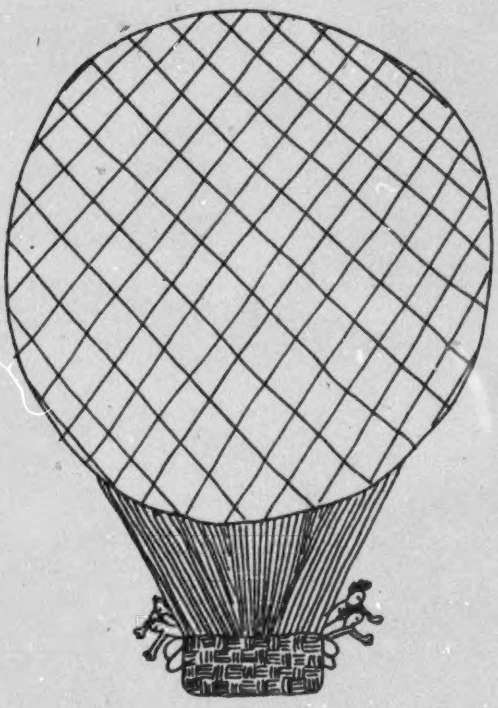
Assess how much guidance you need to give the child as he moves through a problem solving process.

Do you need to solve the problem for him?

Can you solve it jointly?

Can he do it by himself?

In all cases it is the responsibility of the teacher to appraise the situation and determine how to help the child or children to begin to take more responsibility for their own thoughts and actions; how best to help them reason and decide; to think constructively and creatively. When the teacher utilizes all the tools at his command to achieve this end, the solving of problems can be an effective tool for learning.



III

HELPING CHILDREN ASSUME RESPONSIBILITY FOR THEIR PROBLEMS

A. Knowing Children

- Understanding and respecting the child
- Observing, conversing, listening
- Assessing the situation in context
- Understanding the problem solving process and each child's relation to it

B. Teaching techniques for guiding children's problem solving processes

- "Tuning in" by listening
- "Drawing out" by paraphrasing and questioning
- Idea creation
- Expanding idea creation with fantasy and images
- Connecting creative ideas with reality
- Evaluating ideas

Overview of PART III

In order to support children's taking as much responsibility for their own problem solving as possible it is important for the teacher to first know the children. In order to know them, he needs to understand and respect them by observing, listening and conversing. Assessing children's level of awareness of their own problem solving is an intricate skill that emerges as teachers truly understand children.

Teaching techniques for guiding children in their own problem solving are

- "Tuning in"
- "Drawing out"
- Guiding and supporting the creation of ideas

You may find "tuning in" and "drawing out" to be rewarding and difficult. Idea building is an interesting and complex process, especially when the teacher is ready and willing to facilitate the use of fantasy and imaging.

Integrating your knowledge of children and their awareness levels and the three suggested teaching techniques with the stages of problem-solving is a real task for any teacher. These ideas are presented in this section with the hope that you will find them relevant and operable.

The text and activities will encourage you to observe, assess, and try the teaching techniques and then to apply them to the stages of problem solving with your children.

How does the teacher encourage a child to begin taking the steps to solve some of his own problems? How does the teacher help a child to recognize when a problem exists; to become aware of what he wants or needs to change or what additional information he would like to find? How does the teacher decide how much help to give and when to give it?

A. Knowing Children

Understanding and respecting the child

The first, most basic step that the teacher wanting to find the answers to these questions needs to take is to get to know and understand his students. In order to help a child identify and solve his own problems, the teacher needs to understand and respect the child's logic, values, family background and previous experience. In other words, what the child brings to any situation will affect his ability to deal with it. A teacher learns about a child by observing him, conversing with and listening to him.

Observing, conversing, listening

Observing what behaviors characterize happiness, anger, frustration or contentment for each child, seeing how a child interacts with others, what he shows interest in, gives the teacher clues as to how much and when he needs to help a particular child through the problem solving process.

> *A teacher observes that when Susanna is frustrated or upset she retreats into self-imposed silence; McKinley is more overt and kicks chairs or disturbs other children. At these signals the teacher knows to offer help.*
>
> *Ana is a solitary thinker - likes to work on problems by herself. The teacher probably should not enter a problem situation until Ana indicates by a glance, frustrated look or question that she wants help.*
>
> *Dennis usually needs group ideas and support, and overtly asks for help.*
>
> *Andy is always checking with the teacher - "How do I do this? Is this O.K? What do I do next?" Both Andy and Dennis need teacher support for making some of their own decisions.*

You can't help a child if you can't see the problem from his perspective.

When the child sees that you see the problem as he sees it--that's half the battle.

Too often adults see the problem only from an adult point of view.

ACTIVITY 14: Observing Similarities and Differences

Collect some anecdotal data (without assessing it) from your observations of five to ten children in your classroom. How do they individually react to frustration, anger, personal, cognitive and group problems? Keep records. Then compare similarities and differences. Later you may wish to use this information for assessing and deciding what kind of guidance a child may need and when he needs it as he solves his own and group problems.

Date	Child	Behavior	What was the Problem?

Sometimes how I
react to what happens
is more important
than what actually
happens.

by Michael Grinder
from I AM

The teacher will also gain important information about a child by being approachable, conversing with him and really listening to what the child has to say. These behaviors also indicate to the child that the teacher has interest and respect for what he is thinking, feeling and doing. When a child's self-confidence is thus enhanced, he is more willing and able to acknowledge and cope with his own problems.

Assessing the situation in context

Another step the teacher needs to take towards knowing when and how to help a child to solve his problem is to assess the situation in context, in relation to the child whose problem it is. The teacher needs to gather as much information as he can about the given situation and combine this with his understanding of the particular child. How much can the child handle? Where do his strengths and weaknesses lie? Only when the teacher understands both the child and the problem situation can he decide when and how it's appropriate to offer aid.

> *Susan is having a problem with writing complete sentences. The teacher has observed that she is really engrossed in the electricity area --*
>
> *T: I notice that you are having a problem writing in complete sentences.*
>
> *S: It's boring.*
>
> *T: What could you write about that would be interesting?*

S: I don't know. (Teacher knows that Susan often needs an idea from someone else to trigger her own imagination so he offers one)

T: I have an idea. Do you suppose you could try writing about your electricity experiments using complete sentences, beginning with capital letters and ending with periods?

S: Yeah, I could write them the way they do in the science books.

T: That's a good idea. On Friday please show me your story about what you've done with electricity. We'll check it together for complete sentences. O.K?

S: Sure

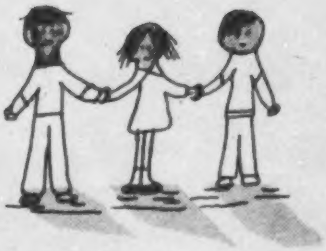
Understanding the problem solving process and each child's relation to it

It becomes obvious that in addition to having a good understanding of the child and the problem situation the teacher needs to also understand the problem solving process itself. Usually included are these stages, although, as mentioned before, they are not necessarily sequential:

identification
clarification
idea creation
implementation
evaluation

> *John, age 15, has so diluted his energies among job, sports, girl friends and school work that he is tired and not doing anything well. An adult's knowledge and perspective can be used to help John see that he has a problem of spreading himself too thin; once he realizes that is, indeed, the problem, he can begin clarifying his priorities and generating some ideas for directing his energy in a more concentrated way.*

A teacher's basic responsibility is to help children become more and more aware of their own stages of problem solving.



ACTIVITY 15: Differing Levels of Awareness

Have you observed some of your children being unaware of or resistant to a problem situation? Are their some who are usually more ready to take responsibility for solving problems? These are truly generalizations, yet they may help in assessing where individual children are in relation to specific stages of problem solving. For this activity just concentrate on children who are at different stages of identifying a problem. Give an example (by describing the situation) of a child who was at each stage of the continuum.

Unaware/Resistant	Becoming Aware	Willing to take Responsibility
Situation:	Situation:	Situation:

B. Teaching Techniques for Guiding Children's Problem Solving Process

It is important for the teacher to observe and assess a child's ability to accept responsibility for different stages of problem solving, and then act on this information. The teacher needs to help the child move as far as he can from unawareness to awareness of his own problems, to developing ideas for solving them.

Helping the child become more aware of what is involved in the solving of a problem, is helping him make more conscious and deliberate a highly intuitive process. How the teacher does this, at whatever stage help is needed, will determine how much the child will actually gain from the process. Guiding, supportive behavior from the teacher will help the child develop confidence and gradual independence. The child will be stimulated to clarify his thinking, feeling and behaving as he is helped to identify his own problem and go through the several stages leading to a possible solution.

There are several techniques that the teacher may find particularly useful in helping a child begin to problem-solve. They include tuning-in through listening, drawing-out through paraphrasing and questioning, and guiding the creation of ideas.

"Tuning-in" by listening

Why Listening is Important

Listening, really tuning-in to a child's thoughts and feelings, achieves a number of positive results. First, of course, it gives the teacher important information about the child which will be helpful in knowing what form guidance should take. Even more significant is the effect listening has on the child himself. By listening attentively to a child, the teacher communicates support and acceptance for what he has to say. The child feels free to express himself and gains confidence when he realizes that his concerns are important enough to warrant adult attention.

Self-confidence can foster constructive problem solving as the child is freed to think about how he wants to change a situation in order to solve his problem. He is free to open up, to identify his own problem and to generate some ideas for a solution. Freeing a child through active listening leads to growth and change, a sense of worth, independence, self-direction and strength.

Often talking is thinking aloud. If the teacher plays the role of sympathetic sounding board, the child may successfully work out some of his problems and ideas, find his own answers, merely be being able to hear his own thoughts spoken.

Listening Skills

Just listening and not talking is communicating. There is value in silence and positive non-verbal messages such as: direct eye-contact, posture and facial expressions. These need to be open, honest and authentic. The child will sometimes reach his own possible solution as the adult takes the time and patience to "hear him out." Listening silently often permits the child to find out his own answers. How many times have you said to a friend, "Listen to this problem I've got." You proceeded to tell him about it, and he just listened intently. Suddenly you said, "Oh, I've got it. I know what I can do about it. Thanks for helping me!" Silent listening often leads to self-directed change as this skill can communicate acceptance. Feelings of acceptance can facilitate the problem solving process for anyone. Just listening non-verbally and keeping your "hands-off" is a way of communicating to the child that he is okay, he can make some mistakes or create his own unique product. The child will feel that the adult accepts what "I'm doing now." Too often we interfere, intrude, check up, join in. Adults don't often enough let children work through their own problems.

Obviously the way in which the teacher listens is crucial to the effect the behavior will have on a child. He must be very careful to not project judgmental interest or to evaluate too quickly the child's process. The child can sense when the listener is bored, impatient, thinking about something else, or disapproving. This will, naturally, have a detrimental effect on the child's confidence and self-expression. Also the teacher will be unable to give the child appropriate aid and support if he tunes out in any way to what the child is saying or feeling.

Adults too often don't stop long enough to hear about the child's frustration, puzzlement, lack of understanding, or to hear whether or not he needs help and at what stage he may need it. Such non-listening attitudes send messages of disapproval. The child may become defensive, non-trusting, or unwilling to change himself or the situation. Non-listening is often couched in non-verbal messages of the frown, lifted eyebrow, pulling away posture, tenseness, clenched teeth. The child picks up these cues that the adult is not listening and therefore, not accepting or, perhaps, disapproving. This leads to the child's closing down, becoming defensive, fearful, unsecure, frozen.

Why Listening is Difficult

In order to listen and then be able to respond with a paraphrase that will help the child further clarify his own problem or thinking, we have to jump over some of the barriers to listening. The common barriers listed below make it difficult for us to hear what someone else is saying from his point of view:

a. Thinking about something else, being pre-occupied with something that's in our own thoughts.

b. Thinking "I've heard that before."

c. Pre-judging or evaluating what the other person is saying. This is probably the single most important barrier to listening. We all have a natural tendency to pre-judge what someone else is saying. Most arguments are based on people's not checking out their assumptions about what another person is saying.

d. Jumping to conclusions. "Oh, I know what he's getting at" -- before HE gets there.

e. Rehearsing our response. Our ego says we want our own viewpoint to be heard. We often give a superficial "Yes, but..." acknowledgment and want to get to our own point of view.

f. Not WANTING to hear... We're threatened and insecure; there's no trust.

g. Hearing what we want to hear. The other person's thoughts and feelings are going through our own "screen," and that "screen" gets closed down when we hear another point of view that we don't agree with.

Listening is not highly valued in today's world. Listening is not seen as a problem. It is almost never taught in school. We learn by copying others, and they are often not good models of listening. When we don't listen, we waste parts of other people and their ideas.

Listening is usually seen as trying to figure out as quickly as possible the "core" of another person's message. This "core" is carefully screened by the listener's already-formed idea of what the other person is going to say. The listener then "tunes out" and "rehearses" or prepares his own statement on the subject. Once we have become skilled listeners, we will observe that it is more the rule than the exception that people talk at one another rather than with one another.

Carl Rogers says that poor listening is an important communication block. Our primary reaction is to evaluate from our own point of view what has just been said to us. Real communication occurs when we listen with understanding and do not immediately evaluate the other person's messages. In this way we can see the idea or feeling from the other person's point of view, sense how it feels to him, and get into his frame of reference.

This takes courage. If you really understand another person in this way, if you are willing to enter his private world and see the way a thought, idea, feeling, or action appears to him, without any attempt to make evaluative judgments, you run the risk of being changed yourself. This understanding or willingness requires flexibility. You just might see it his way. You might find yourself influenced in your attitudes by what he is saying. This risk of being changed can be a frightening prospect. If we had to listen to a speech by the leader of an unfriendly nation, how many of us would dare to try to see the world from his point of view? The great majority of us could not listen. We would find ourselves forced to evaluate, because non-judgmental listening would seem too dangerous.

Research and experience to date would make it appear that breakdowns in communication and the evaluative tendency (the major barrier to communication) can be avoided. The solution is to create a situation in which each of the different persons comes to understand the other from the other's point of view. Defensiveness, fears, unwillingness to risk, and lack of trust drop away as people find that the only intent of the other person is to understand and not to judge. Such listening is active and empathetic.

ACTIVITY 16: Accurate Listening

Accurate listening has just been identified as a difficult skill. Often we do not realize the inaccuracy of our perceptions of what we are hearing. In order to experience this, please choose one of the following activities:

1. Play three or four sequences on one of the many sound effects records available.* Do not look at the record label for identification of the sound effect. Individually record what you think the sound is. If you are in a group, compare your responses with others. You may be amazed at the diversity of interpretations within the group as you note the differences in answers for the same sound. This experience may help you see how much one takes for granted. We assume the meaning of many sounds, words and statements. We really have to "be there" to listen and understand accurately. If you are alone, check your perception of the sound effects with the label of the record.

2. If you cannot obtain a sound effects record you may ask a friend to make some sounds behind your back or while you are blindfolded: crumpling paper, popping a balloon, filling a bucket with water, slamming a door, scuffing slippers on a wooden floor, bouncing a ball, writing with a felt pen, tapping glasses partially filled with water, etc. Follow the same procedure as outlined in option one for checking out the accuracy of what you're hearing.

3. A third choice might be listening for "layers of sound." In order to do this, find 2 or more people who will sit quietly with you. Sit completely still for 3-5 minutes. Listen to everything being aware of the proximity of sounds. Record what you heard. Compare your writings with those who were listening with you. Discuss the layers of sound, and how we are prone to "tuning out" sounds we don't wish to hear.

In activity 18 (Paraphrasing), you will practice "checking out" your assumptions about what you hear.

You may wish to try these same activities with your children.

When I experience a feeling and express it in a thought--
I may cause a gap by means of translation.

---

*"Sound Effects in Stereo". Audio Fidelity Records, 1971. Distributed by Allied Radio Shack, Tandy Corp, Fort Worth, Texas, 76107

ACTIVITY 17: Listening in the Real World

Can you recall an example from your own experience when listening to another person (especially when you disagreed with him) was especially difficult? What did you do? What was the effect of your action or response?

Non-Listening —— Freezes
Active-Listening —— Frees

"Drawing-out" by paraphrasing and questioning

It is difficult and hardly appropriate to remain silent too long in a human interaction. People need to communicate verbally. Since talking becomes essential at some point, the way adults talk to, respond to children is important to consider.

The technique of "drawing-out" incorporates two teacher behaviors, paraphrasing and open questioning.

Paraphrasing

A paraphrase is a clarifying tool: "This is my experience with what you said," I can speak up for myself only after I have first restated your ideas and feelings from your point of view--to your satisfaction. This means that before I present my own point of view, it is necessary for me to achieve your real frame of reference. I have to understand your thoughts and feelings so well that I can summarize them for you. This is often difficult to do, especially if I disagree with you. Often, when I see something from your point of view, my own comments will have to be drastically revised. Much of the emotion may then drop out of the discussion, differences are reduced, and those differences that remain are looked on as rational and understandable.

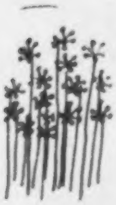
The paraphrase might begin with:

"You feel that . . ."

"Your problem is . . . am I right?"

"My understanding of what you said is . . ."

This not only helps the teacher check out his perception of what the child is saying, but also helps the child to clarify his own thoughts, to go deeper, to develop his thoughts further; to say what he really means. When the teacher takes the time to paraphrase the information he has received from the child, he is indicating that he values what the child has to say enough to want to understand it as well as possible. By paraphrasing, the teacher often offers the child another perspective on his thoughts, feelings and ideas which can stimulate deeper awareness and understanding on the child's part. As does true listening, paraphrasing encourages the child to express himself, promotes open communication by acknowledging the child's thoughts, feelings, ideas, actions, and by showing trust in his ability to think, to work through his own problems.



I know that you believe you understand
what you think I said--
But I am not sure that you realized
that what you heard is not what I meant!

ACTIVITY 18: Paraphrasing

As the purpose of paraphrasing is to be sure you understand what the other person means by what he's saying, paraphrasing is a skill that involves listening by:

- Not only hearing the words of the speaker, but hearing and understanding the feelings behind the words as well.
- Empathizing with the speaker; that is, feeling his feelings and seeing the issue through the speaker's eyes.
- Suspending one's own value judgments so as to understand the speaker's thoughts and feelings as he himself experiences them.

Communicating and building a relationship is a two-way street. You may begin to understand how difficult it is to really listen to another person. When tempers flare, when tension rises, when parents and children, students and teachers, or any group of people are not listening to each other, paraphrasing may be a useful, clarifying behavior.

1. Find a partner
2. Pick a statement offered below or choose your own, preferably a statement you may disagree on as this will make you really try to paraphrase!

> *When a child grossly misbehaves, the best way to let him know his behavior is inappropriate is to isolate him.*
>
> *(or)*
>
> *Grades are a motivating device.*
>
> *(or)*
>
> *Parents should hire teachers.*
>
> *(or)*

Parents have the right to say what they want their children to learn. Teachers should be required to follow parent demands.

(or)

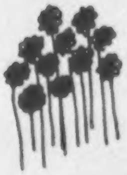
Teachers should teach children cognitive skills, as they are the only ones who know how to do so adequately. Aides should learn from them and do housekeeping chores.

(or)

Children should be allowed to use in school any language that they are comfortable with - including profanity.

(or)

3. Ask your partner to talk about his position on your chosen issue for one or two minutes.
4. Paraphrase what you heard your partner say. Did you adequately hear what he was saying? Was he saying what he really meant? How did he feel when you paraphrased? If the answers to these questions are satisfactory, then you have earned the right to make your own statement on the issue.
5. You may wish to try the same exercises and not use the paraphrasing technique. What were the differences in feelings and effects?



Acceptance of another
Does not always
equal approval

Open Questioning

Questioning the child is often an excellent means of stimulating the child's own ideas. Whenever possible, the question should require a more detailed response than a mere 'yes' or 'no.' It should be designed to trigger and guide the child's own thoughts. Sometimes a child will appear not to have any ideas or is reluctant to express them. Everyone does have ideas, but a child may not be aware of them or may lack the confidence or trust to verbalize them. The teacher can demonstrate interest and concern for these ideas by asking some thought-provoking questions, paraphrasing, or even by offering an idea that is likely to provoke another from the child. After experiencing these efforts many times, the child will probably become more trusting, able and willing to generate his own ideas.

ACTIVITY 19: Questioning

Thought-provoking questions need to be open-ended. Such questions often help the child begin to generate his own ideas. Below are some categories of open questions:

- Prediction: *"What would happen if...?"*
- Action: *"How can you...?"*
- Observation: *"What happened when...?"*
- Seeing Relationships: *"What's going on here...?"*
- Explanation: *"What made that happen...?"*
- Feelings: *"How do you feel about...?"*

Questioning in this manner may free the child to generate some of his own ideas.

- At appropriate times try asking some of these kinds of questions. Do they help children generate some of their own ideas?

Example of "Tuning In," "Drawing Out"

By using these techniques which show sympathetic interest in and respect for the child's viewpoint, the teacher can also avoid the negative effects that a child experiences when a teacher advises, commands or gives his own solutions that are not acceptable to the child.

Scene: *Michael, age 4, is trying to cut out his puppet. He complains that it's too hard to cut. The scissors slip and he tears the puppet. He cries.*

How might a teacher respond?

		Analysis of Teacher behavior
Example 1:	*T: You're a big boy now, just stop crying. You can make another one it was just paper. Now go back to the table and start a new one.*	Teacher evaluates, commands, and gives a solution without "tuning in" or listening.
	vs	vs
Example 2:	*T: I see you're very upset by the puppet, Michael. Will you tell me what happened?*	Teacher "tunes in" to child's feeling and action by questioning and listening.
	M: Sob... it tore... it's messed up... sob.	
	T: I can understand that you're upset because the puppet tore. Do you have any ideas of how you could fix it?	Teacher values child's viewpoint by paraphrasing and drawing out his ideas through questioning.
	M: No...sob... tape on it.	
	T: Tape is one idea.	
	M: No, it'll show.	

T: Well, maybe we could hide the tape some way. Can you think of one way to hide it?

M: Put it on the back.

T: What else will you have to do to make sure it won't show?

M: Measure it so it won't go too far.

Idea Creation

Creation of ideas is one of the most essential stages of the problem-solving process. Ideas are the synthesis of conscious and unconscious thoughts, feelings and experiences. They are thought forms which can alter, create or clarify at each stage of the process. An idea is an extension of one's ego, a reflection of what and how one thinks, feels, perceives. As such it is especially vulnerable to criticism. Many people become defensive if their ideas are criticized, and react with anger, disdain or withdrawal. There is often jealousy over ideas, and sometimes a tendency to demean another's ideas in a misguided effort to enhance those of one's own. Ideas are so necessary to functional, creative thought and action that the teacher must take special care to encourage and support each child's expression of an idea. By being open and receptive to all ideas, he will set an example for the children to value each other's ideas, as well. This will enable freer expression and exchange of ideas to take place within the classroom. These conditions are conducive to effective, creative problem solving.

Expanding Idea Creation with Fantasy and Imaging

Children can be further guided and supported in the generation of their own ideas by the use of the imagination - fantasy - to stimulate rich, new ideas. This technique enables children to enjoy and practice the all-encompassing idea-creation aspect of problem solving; it includes various forms of fantasy and imaging. Fantasizing exercises lead the mind in its ability to find alternate possibilities and solutions. It can be used to ease the child into the problem solving process without any sort of pressure, *How would you communicate with someone from another planet? What would it be like to have dinner at a giant's house? What would happen if a giant wanted to spend the night at your house?* This encourages free-flow thinking for there are no right or wrong answers. There can be no criticism. The mind can expand to look at experience in new ways. Daring to look at familiar things differently or imaging strange things as commonplace will often stimulate new ideas. Once a child has a free rein to develop and air his ideas the teacher may well be amazed by the richness of a child's mind and the surprises that it holds.

Fantasy can take the form of analogy, comparison of one thing to another to add dimension to and give insight into both.

> *This typewriter is like a human being. It makes so many mistakes, especially early in the morning.*
>
> *or*
>
> *That pile of fall leaves is like a classroom of 25 children. There are many kinds. Each leaf has veins or life-lines that are individually different.*

ACTIVITY 20: Using Analogies with Children

Try using analogies with your class. Try creating some analogies with these riddle-like experiences. There will probably be as many creative variations as there are children. Delight in the differences!

Toothpaste is like what animal?

Why?

A washing machine is like what animal?

Why?

Why is gossip like a truck tire?

Why is morning like a butterfly?

Which takes up more space--a laugh or a cry?

Why?

Now create some analogies of your own.

ACTIVITY 21: Imaging

Another way to use your imagination is to consciously form images. Images often have new material for ideas, and new solutions for old problems. You need to suspend your own critical judgment and try forming some images to appreciate the fact that you CAN do it, and that it is really a fun experience. Choose one or two of the following and write a paragraph about your image. Share and compare images with a partner or small group.

> *Imagine you are a cloud. What kind of a cloud are you? What color are you? What are you made of. What do you see? How do you feel? How do you affect people below you?*
>
> *or*
>
> *Imagine you are a blade of grass. You are constantly being trampled on. How do you feel when someone forgets to water you? How do you feel when you are cut down once a week by a boy with a power mower? How do you feel when you get dumped into the warm, moist, decomposing compost pile?*

Use these images or others with the class. Have them imagine aloud, or write them as stories which can be shared.

Connecting creative ideas with reality

In order to connect images, analogies to reality -- to get them into a form, a plan, that may really work -- you need to look closely at the image and let it lead you to a new idea.

Evaluating Ideas

When evaluating ideas, it is important to recognize and separate the useful parts of the idea from the drawbacks. To build an idea is to add to and modify it so that the advantages are retained and the disadvantages are eliminated. There is often a greater tendency to focus on the negative parts of an idea and kill it before it ever reaches maturity: *That will never work. That's a really wild idea!* The following example shows the progress from imaging to creation of a usable idea by building on the positive points of a "wild" idea:

Scene: *A group of children in a 4th grade class was designing and constructing kites to use in the school May Day Celebration. No one had thought of bringing the traditional old, ripped sheet to tear into strips for tails. The problem facing these children was: How can we make tails for our kites without any cloth?*

The teacher decided to try some fantasy in order to generate some really new ideas. He asked the children to take an imaging trip by becoming a flying horse in their minds. The children giggled and each child closed his eyes and pictured himself as a flying horse. Jeffry's image was of a big blue and purple striped horse. It was huge with very strong muscles. His hoofs, legs and body were all so heavy that he needed a very long and heavy tail to help him fly. In his mind's picture the long horse-hair tail evolved into a huge braid. For some reason this braid was long enough and swished with such power that Jeffry's horse propelled itself through space with ease and beauty.

The teacher then asked each child to take their flying horse image and relate it to the problem of making kite tails.

Jeffry had no problem in making the connection. "A long paper tail!"

A non-supportive teacher response would have been: "Oh, Jeffry, that kite will never fly with a paper tail!" The effect of such a teacher response would have been that Jeffry would never get a chance to try out his idea of braiding and twisting the paper into a tail which he thought might be stronger than cloth.

Instead, the supportive teacher would first concentrate on what might be useful in Jeffry's idea: "I like your idea for using paper as we have no cloth, and we have lot's of strong paper." Then she migh[illegible] on with her concerns: "But I don't think paper is [illegible] enough to last in this wind."

Jeffry:	*"I could braid the paper to make it stronger."*
Teacher:	*"I like it being strong, but I'm concerned about the weight."*
Jeffry:	*"How about just using 2 strands of paper and one strand of string to make 3 strands for braiding--like in Rachel's hair... String would make it stronger and lighter."*
Teacher:	*Great, Jeffry... go to it, and we'll all be anxious to find out how your idea works.*

ACTIVITY 22: Connecting Ideas to Reality by Effective Evaluation

Activity to use
with children

Try some imaging with your children - at first just for fun. The sharing of the images will help you all appreciate how much creativity all the children have!

Then try solving a problem by first imaging, then carefully lifting out an idea that connects with reality. Evaluate the idea by finding the good parts and carefully working out the connections.

Continue to feel free to imagine, to fantasize and to build creative ideas for yourself and with children. Evaluate carefully and humanly in order to protect each person and each idea.

ACTIVITY 23: Paper and Pencil Problem Solving

Refer to your list of "Problems-to-be-solved." Find a problem that would be appropriate to work on with a child or group of children. Try this "paper-and-pencil" method of working out and analyzing your own behavior. Anticipate the interactions, and the specific dialog which might occur.

Problem:

How would you "tune in" to the child's viewpoint?

How would you "draw out" and help the child clarify his viewpoint?

How would you guide and support the child's development of his own ideas? (Could you use fantasy or imaging to help create some new ideas?

ACTIVITY 24: Your Real-World Problem Solving Behavior

Now that you have tried applying the behaviors of

- "tuning in" by listening
- "drawing out" by paraphrasing and questioning
- Guiding and supporting the development of ideas (and possibly using some fantasy),

try applying these skills with other adults in a role-play situation and then with children in the classroom. Record and analyze your own behavior.

1. How well did you tune in and listen?

   What did you do or say?

   What was the effect?

2. How well did you paraphrase or question?

   What did you say?

   What was the effect?

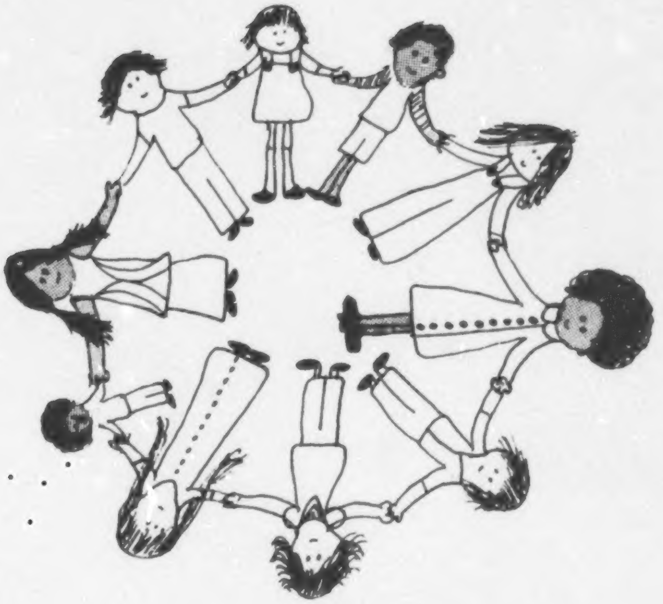
3. How well did you guide and support the creation of ideas?

Did new ideas come immediately?

Did you use some fantasy and connect it with reality?

What did you do or say?

What was the effect?



ACTIVITY 25: Integrating PART III

This activity is intended to help you pull together your learnings in this section that has covered?

- Knowing children
- Observing for varying levels of awareness of problem situations
- 3 Teaching techniques to apply to the 5 stages of problem solving.

As you have begun to use these tools with paper and pencil, with a partner in a role-play situation and with real children, how are you feeling about your own competency? Please take credit for the things you have done well. If you feel you need more practice, re-read this section and/or use the next sheet as a guide.

Problem Solving Practice

Three key teacher behaviors that apply to all stages of problem solving

- "Tuning in" by listening to children's viewpoints
- "Drawing out" and clarifying children's viewpoints by paraphrasing and open questioning
- Guiding and supporting children's development of their own logic and creative ideas (sometimes using fantasy and imaging

Stages of Problem Solving

1. Identifying the Problem:

   I want/need to find out how to...

2. Clarifying the Problem:

   It is a problem for me because...

   I have already thought about or tried...

   My goals for changing the situation are...

3. Creation of ideas:

   My new ideas are...

   Ideas from others are...

   The best idea is...

4. Implementation:

   Based on the best idea, my plan is to...

5. Evaluation:

   My plan worked because...

   My plan didn't work because...

Note: Please keep in mind that individual children need guidance at different stages.

CONCLUSION

A. Example

B. Summary

A. Example

Example of Tracing
Situations through
Problem Solving
Stages

Having reiterated that at each stage of the problem solving process the teacher needs to use knowledge of children and the situation in order to judge how much help each child needs and when he needs it; and having discussed some of the techniques for guiding children, it might be a useful part of this summary to follow a few situations through the stages of problem solving. Please note when teacher guidance was needed within each situation.

Problem,Identification

Some children who are unaware of the problem are willing to accept a teacher's help in identifying it. *Susanna has forgotten her lunch and is too upset to even identify this as a problem that can be solved. The teacher can help her to become more aware by identifying the problem for her, and encouraging her to express some ideas and make some choices.*

Other children who are unaware of a problem are resistant to accepting the problem or a teacher's help in solving it. *McKinley leaned over and put a big red crayon X on Val's writing paper. McKinley was unwilling to say that he had caused a problem that needed to be solved. The teacher needed to make a clear problem statement for McKinley: "You have violated Val's right to the privacy of his own work." If McKinley was still resistant to accepting the problem the teacher will probably have to begin the* *problem solving process for him: "I'm thinking you need to check with Val about his feelings about having his paper marked on. Then we'll work on a solution you both can accept."*

Other children are very able to identify their own problems with a minimum of teacher guidance. *Becky is never picked to be on a kickball team. She wants to play and the other kids don't want her. She comes to the teacher and says, "How can I get to play kickball?" This is a clear statement of the problem. The teacher can then begin to help her with further steps.*

The bus driver got angry at Carl for disturbing other children on the bus and told him he couldn't ride the bus anymore. Carl said, "How am I going to get to school tomorrow?" This is another clear problem statement.

Teachers constantly need to decide whether to identify a problem for the child, with the child or step aside and let the child do it alone. We will follow Susanna and Becky through the balance of the problem solving process and note the teacher's decision-making process.

Problem Clarification

If and when the teacher intervenes at this stage is dependent upon his knowledge of the child and the situation. *Susanna can say what it is she wants - a lunch! That is her goal. She is clear on how she wants the situation changed. The teacher does not need to help her clarify her problem.*

Becky may need some teacher guidance in clarifying her problem of wanting to get on a kickball team. The teacher may ask her:

T: What have you already tried or thought about?

B: I told them I wanted to play.

T: Did that work?

B: No, they said I wasn't good enough.

T: O.K., Becky, how could you fix it so that the situation would be changed?

B: Get good enough.

T: I'm hearing that you want to get better at playing kickball.

B: Yeah.

T: That sounds like a goal you have for yourself.

Idea Creation

The teacher observes that Becky is on the verge of an idea that might solve her problem, and she draws it out.

T: I'm thinking you have an idea.

B: Oh, I could get Uncle Max to help me learn how to play.

At this point, the teacher only needs to support and encourage Becky by helping her devise a plan that specifically identifies when she could talk to Uncle Max and when they would practice. Perhaps the teacher might even encourage Becky to tell the other children about her plan and gain their support. This would be anticipation of possible outcomes: If she learned to play better, the other children would want her on a team.

Susanna, on the other hand, is still too upset to come up with any ideas. The teacher might offer one, and/or ask a small group of other children to help. What would they do?:

Call mother?

Borrow money from teacher?

Ask other children to share their lunches?

Make a lunch from the cheese and fruit snack that day?

Implementation of Ideas/Plans

Again Becky's plans are already being formed as she develops her own idea of getting help from Uncle Max. She is not asking for or needing teacher guidance. The teacher needs to allow her the freedom of making her own plans.

Susanna still needs teacher guidance in deciding on the best idea and planning how to carry it out.

> *Her mother isn't home, so she can't call her. The teacher could loan her some money, but other children have already offered to share lunches.*

The teacher needs to help her make her own decision by asking which idea she likes best. She likes sharing with the kids. *Who will you share with and how will you return the favor?*

Evaluation of outcomes

Becky's plan will have worked if she learns to play better and the other kids invite her to be on their team. Teacher guidance may be needed to help her take credit for her own problem solving as she integrates the results of her plan and decides that she has met or not met her goal.

Susanna will probably need teacher help to evaluate her plan by deciding if the sharing of an enjoyable lunch with a few classmates, met her goal.

Teacher supported evaluation will help both of these children to integrate their problem solving situation so that they can build on the experience and apply what they have learned to future situations.

B. Summary

The focus of this unit has been an affirmation that children learn important survival skills as they take on an increasing amount of responsibility for their own problem solving processes. When teachers apply the basic skills of:

- "Tuning in" and listening
- "Drawing out" by paraphrasing and open-questioning
- Guiding and supporting the development of creative ideas,

they help children move through their own stages of problem solving.

When teachers value problem solving as an important part of the curriculum, they will help children learn:

- To assess their own needs and the needs of others
- To set their own goals, and balance these with group goals
- To develop strategies for meeting those personal and group goals
- To evaluate the outcomes.

It is our goal for teachers to also help children gradually move beyond immediate cognitive, social and personal problems, toward beginning to identify larger issues that require answers; issues that involve man's survival on this earth: pollution, the energy crisis, man's inhumanity to man.

The teacher, as a member of the social group in the classroom, needs to raise some of his own questions/issues/problems-to-be-solved in the presence of learners, and proceed through some problem solving processes. As he involves individuals and groups in clarifying and interacting on issues, generating and building ideas for possible solutions, he becomes a model for children. This kind of teacher involvement helps children to learn that it is all right to question, to wonder, to make mistakes and to use others as resources.

The teacher not only serves as a model, but as a guide and support as children begin to initiate their own issues, tasks, question-raising process as small and large issues are addressed: *How can we rig up a special light in that shadowed area in the reading corner? How could we go about changing the playground hours to include evening and weekends? How can we improve the nutrition in our local jail?*

Interactions that are based on children's respect for one another's questions, concerns, ideas, backgrounds, strengths, are likely to lead to cohesiveness, teamwork and a sense of unity. Children learn to care for each other as individuals, to use and build on each other's strengths while addressing issues important to them in their world.

When the discoveries and integrations of personal learning are shared, there is benefit for all. Children extend their personal knowledge by working with, sharing and integrating with others. They become resources to each other. Each learner-discoverer moves beyond self to become a contributor to the growth of others. Each learner is recognized as having his own unique contribution which, after being shared, may be integrated and used by others.

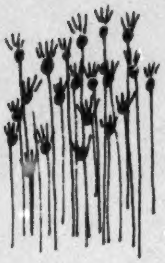
ACTIVITY 26: Your Next Steps

How often do we stop long enough to really examine our own behavior in order to know what we do and how we do it? Now might be an appropriate time to decide what it is about your problem solving behavior with children that you wish to keep the same, and what you want to change. The following questions may help you with this process:

What in this unit has reinforced what I already do?

What would I like to change? What skills would I like to work on that will increase children's taking their own responsibility for problem solving?

Additional problem solving forms are included here for your personal use.



Take one of the problems on your "Problems-to-be-solved" list. Try using this form for your own "paper-and-pencil problem solving."

1. **Problem Identification:**

   I want or need to find out how to . . .

2. **Problem Clarification**

   It is a problem for me because . . .

   I have already thought about or tried . . .

   My goals for changing the situation are . . .

3. **Creation of Ideas:**

   My new ideas are . . .

   Ideas from others are . . .

   The best idea is . . .

4. **Implementation:**

   Based on the best idea, my plan is to . . .

5. **Evaluation:**

   My plan worked because . . .

   My plan didn't work because . . .

Take one of the problems on your "Problems-to-be-solved" list. Try using this form for your own "paper-and-pencil problem solving."

1. Problem Identification:

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   It is a problem for me because . . .

   I have already thought about or tried . . .

   My goals for changing the situation are . . .

3. Creation of Ideas:

   My new ideas are . . .

   Ideas from others are . . .

   The best idea is . . .

4. Implementation:

   Based on the best idea, my plan is to . . .

5. Evaluation:

   My plan worked because . . .

   My plan didn't work because . . .

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